

CLAIMS

1. A system for processing payments and transactions between payers (13) and payees (27, 29, 14, 14a, 13a, 46) associated to the system, using at least one communication by means of digital mobile telephony, the system comprising

- a first server (20) interconnected with telecommunication means (18, 19, 28, 47) with first data storage means (22), and including account management means (20e) that process first data of an account of each associated payer (13) and second data of an account of each associated payee (27, 29, 14, 14a, 40, 46);

wherein

- the first telecommunication means (18, 19, 28, 47) selectively communicate the first server (20) with a digital mobile telephone unit (16) identified by an admissible telephone number of an associated payer (13) and with a telecommunication terminal (15, 15a, 27, 29, 41, 46) identified by an admissible identification code of an associated payee (27, 29, 14, 14a, 40, 46); the telecommunication means (18, 19, 28, 47) comprising a plurality of telecommunication equipments (18, 19);

- the first data storage means (22) contain first information on each associated payer (13), said first information comprising at least the admissible telephone number, at least a pre-established authorization criterion for authorizing at least one transaction that requires a payment from the associated payer's (13) account and at least a safety criterion associated univocally to the associated payer's (13) telephone number, as well as some second information on each associated payee (27, 29, 14, 14a, 40, 46) that comprises at least the admissible identification code;

the first server (20) comprising

- first verifying means (20a) for verifying in the

data storage means (22) whether a first message received through the telecommunication means (18, 19, 28, 47) contains an admissible telephone number of an associated payer (13) and an admissible identification code of an associated payee (27, 29, 14, 14a, 40, 46), said first verifying means (20a) generating a first acceptance message when they detect an admissible identification code and an admissible telephone number;

- second verifying means (20b) for verifying in the data storage means (22) whether a transaction authorization request received through the telecommunication means (18, 19, 28, 47) in addition to the admissible telephone number detected by the first verifying means, satisfies said pre-established authorization criterion, said second verifying means (20b) generating a second acceptance message when the authorization request satisfies said authorization criterion;

- third verifying means (20c) for verifying in the first data storage means (22) whether a safety parameter received through the telecommunication means (18, 19) satisfies the safety criterion associated to the admissible telephone number detected by the first verifying means, said third verifying means (20c) generating a third acceptance message when they detect that the safety parameter satisfies the safety criterion associated to the admissible telephone number;

- authorization means (20d) for authorizing the account management means (20e) on the basis of the authorization request, to process a debit in the associated payer's (13) account and to process a corresponding credit in the associated payee's (27, 29, 14, 14a, 40, 46) account as long as the first, second and third acceptance messages have been generated;

- rejection message generating means (20f) for

generating a rejection message when at least one of the acceptance messages has not been generated, and for transmitting the rejection message to the telecommunication means (18, 19, 28, 47);

5       - confirmation message generating means (20g) for generating at least a confirmation message when at least one of the acceptance messages has been generated, and for transmitting said confirmation message to the telecommunication means (18, 19, 28, 47), and for  
10 selective transmission of the confirmation message to the mobile telephone (16,41) identified by the admissible telephone number in said first message, and to the telecommunication terminal (15,15a,27,29,41,46) identified by the admissible identification code;

15       - second data storage means (21) that contain at least first information referring to the admissible telephone number of each payer (13), and at least second information referring to the type of digital mobile telephone (16, 41) belonging to each telephone number;

20       - selecting means (20h) for verifying in said second data storage means (21), the second information corresponding to the digital mobile telephone unit (16, 41) identified by the admissible telephone number and for selecting one of the telecommunication equipments (18, 19)  
25 that communicates with a digital mobile telephone (16, 41) identified by the admissible telephone number by means of a telecommunication service being compatible with the type of digital mobile telephone (16, 41) identified in said second information.

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2. A system according to claim 1, wherein the admissible identification code of each payee (27, 29, 14, 14a, 40, 46) is selected among a telephone number, a number related to a telephone number, an Internet code, a code  
35 representative of an Internet code, an e-mail address, and

a code based on an e-mail address.

3. A system according to claim 1, wherein the first  
verifying means verify the payer's (13) admissible  
5 telephone number from a code received through the  
telecommunication means (18, 19, 28, 47), representative  
of said admissible telephone number and contained in the  
first data storage means (22).

10 4. A system according to claim 1, wherein the second  
acceptance message generates an order to the  
telecommunication means (18, 19) to transmit to the mobile  
telephone (16) of a payer (13) identified by the  
admissible telephone number, a first confirmation message  
15 that contains a request to transmit the safety parameter  
that is to be verified by the third verifying means (20c)  
against the safety criterion.

20 5. A system according to claim 4, wherein the second  
acceptance message further generates an order to the  
telecommunication means (18, 19, 28, 47) to communicate  
with the telecommunication terminal (15, 15a, 27, 29, 46)  
identified by the admissible identification code detected  
by the first verifying means (20a), to transmit a second  
25 confirmation message that confirms the generation of the  
first acceptance message.

30 6. A system according to claim 1, wherein the third  
acceptance message generated by the third verifying means  
(20c) generates an order to the telecommunication means  
(18, 19, 28, 47) to communicate with the telecommunication  
terminal (15, 15a, 27, 29, 46) identified by the  
admissible identification code detected by the first  
verifying means (20a) to transmit a third confirmation  
35 message that confirms the generation of the third

acceptance message.

7. A system according to claim 1 or 6, wherein the third acceptance message generated by the third verifying means (20c) generates an order to the telecommunication means (18, 19) to communicate with the mobile telephone (16) identified by the admissible telephone number detected by the first verifying means (20a), and to transmit a fourth confirmation message that confirms the generation of the third acceptance message.

a 8. A system according to claim ~~1, 6 or~~ 7, wherein the third acceptance message generated by the third verifying means (20c) generates a command to the account management means (20e) to process the debit in the payer's (13) account and to process the corresponding credit in the payee's (27, 29, 14, 14a, 40, 46) account.

a 9. A system according to claim ~~1 or~~ 8, wherein the account management means (20e) control at least a first intermediate account of each payee (27, 29, 14, 14a, 40, 46) contained in the first data storage means (22) and in which each credit is made.

10. A system according to claim 9, wherein the account management means (20e) comprise first transmission means for transmitting said credit to an administration and management server (23) that comprises a payees' data bank (25) in which all credits made in favor of each payee (27, 29, 14, 14a, 46) are stored, the administration and management server (23) transferring the credits contained in the data bank (25) to financial entities that manage each payee's financial accounts.

a 11. A system according to claim ~~1 or~~ 8, wherein the

account management means (20e) control second intermediate accounts selected from prepayment accounts, debit accounts in real time and post-payment accounts, of the payers (13).

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12. A system according to claim 11, wherein the prepayment accounts controlled by the account management means (20e) comprise an electronic purse previously created in the first data storage means (22) for each buyer (13).

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13. A system according to claim 1, wherein the authorization request comprises data regarding the value of the transaction, and wherein the pre-established authorization criterion verified by the second verifying means (20b) is selected among an available balance, a maximum credit limit and combinations thereof, established for each account of each payer (13).

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14. A system according to claim 8, wherein the account management means (20e) comprise second transmission means for transmitting said debit to an administration and management server (23) that comprises a payers' data bank (24) wherein all debits made against each payer (13) are stored, the administration and management server (23) transferring the credits contained in the payers' data bank (24) to financial entities that manage each payer's financial accounts.

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15. A system according to claim 1, wherein the safety criterion verified by the third verifying means (20c) is a secret identification code known by the payer (13) and stored in the first data storage means (22).

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16. A system according to claim 15, wherein the third

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verifying means (20c) directly verify whether the safety parameter contains the secret identification code.

17. A system according to claim 15, wherein the third  
5 verifying means (20c) verify whether the safety parameter contains an encrypted result of a self-verification (33) carried out locally in the mobile telephone (16) after direct entry (6) of the secret identification code into the mobile telephone by the payer (13), by means of  
10 decryption means for decrypting the encrypted result, on the basis of the secret identification code stored in the first data storage means (22).

18. A system according to claim 4, wherein when the first  
15 message verified by the first verifying means (20a) is a message received from the telecommunication terminal (15, 15a, 27, 41, 46), the second acceptance message generates an order to the telecommunication means (18, 19) to establish communication with the mobile telephone (16) for  
20 requesting the payer (13) identified by the admissible telephone number to transmit the safety parameter.

19. A system according to claim 4, wherein, when the  
25 first message verified by the first verifying means (20a) is a message received from a payer's (13) mobile telephone (16), the second acceptance message generates an order to the telecommunication means (18, 19) to transmit a message to said mobile telephone (16) requesting the payer (13) identified by the admissible telephone number to transmit  
30 the safety parameter.

20. A system according to claim 4, 18 or 19, wherein the  
second acceptance message further generates an order to the telecommunication means (18, 19) to transmit at least  
35 the value of the transaction and an identification of the

payee, which are transmitted together with the message requesting the safety criterion.

21. A system according to claim 1, wherein the first server (20) processes a first message that furthermore contains an identification of an e-mail address, wherein the payee (27) is a supplier of software files, and wherein the confirmation message generating means (20g) furthermore generate a further confirmation message that contains a decryption code of the software file, received from the payee (27) in the first server (20), said further confirmation message being transmitted to the payer's (13) mobile telephone (16).

22. A system according to claim 1, wherein the first server (20) further comprises first detecting means (20i) for detecting a first instruction to make a purchase with advance payment and collection code generating means (20j), and wherein the confirmation message generating means (20g) also generate a complementary confirmation message that contains the collection code, said complementary confirmation message being transmitted to the payer's (13) mobile telephone (16) and to the payee's (14, 14a, 27, 29, 46) telecommunication terminal (15, 15a, 27, 29, 46).

23. A system according to claim 1, wherein the first data storage means (22) further comprise, with respect to each payee (14a, 46), third information associated with said second information and that comprises data regarding products or services corresponding to each authorized transaction, and wherein the first server (20) further comprises

second detecting means (20k) for detecting a second instruction to manage a delivery in person corresponding



to an authorized transaction and received from the telecommunication terminal (15a) being a payee's (14a) mobile telephone.

5 delivery code generating means (20l) for generating a delivery code identifying at least a product or service to be delivered, and identification message generating means (20m) identifying said product or service, and wherein the confirmation message generating means (20g) further  
10 generate an additional message that contains the delivery code, said additional message being transmitted to the payer's (13) mobile telephone (16) and to the payee's (14a) mobile telephone (15a) and the identifying message being transmitted at least to the payer's (13) mobile telephone (16) along with a request to transmit the safety  
15 parameter,

and delivery management processing means (20n) that, when the third verifying means (20c) have verified that the safety parameter satisfies the safety criterion associated to the payer's (13) mobile telephone, generate  
20 an entry in a delivery note data base (37).

24. A system according to claim 1, wherein the first data storage means (22) also comprise fourth information associated to said second information and that comprise  
25 reference codes that identify the products or services of at least one payee (14a, 46) as well as a price associated to each product or service.

25. A system according to claim 24, wherein the fourth  
30 information also comprises a first selectable telephone number comprised of one of said reference codes and an identification code of the corresponding payee (14, 46), and that constitutes the admissible identification code.

a 35 26. A system according to claim ~~24~~ or 25, wherein the

fourth information also comprises the admissible identification code in the form of a telephone number for access to the payee (16,46) associated to at least a first menu comprised of the reference codes, the products or services identified respectively by each one of said reference codes and the price of said products or services.

27. A system according to claim 1, wherein the admissible identification code is an admissible access telephone number for accessing a second menu of respective admissible identification codes of a plurality of associated payees (14a, 46) and wherein the first data storage means (22) further comprise fifth information associated to said second information and that comprise reference codes that identify products or services of each one of the payees (14a, 46) as well as a price associated to each product or service.

28. A system according to claim 27, wherein the fifth information further comprises a first selectable telephone number comprised of one of said reference codes and an identification code of the corresponding payee (14, 46) and that constitutes the admissible identification code.

29. A system according to claim ~~27~~ or 28, wherein the fifth information further comprises the admissible identification code as an access telephone number of the payee (14,46) being associated to at least a first menu comprised of the reference codes, the products or services identified respectively by each of said reference codes and the price of each of said products or services.

30. A system according to claim 1, wherein the second information in the first data storage means (22) comprise

identification codes of a plurality of vending machines (29) each one of which includes a digital mobile telephone (29a) as a telecommunication terminal, identified by a mobile telephone number as an admissible  
 5 identification code;

an authorization code associated to the admissible identification code of each vending machine;

an activation code for activating the vending machine (29), associated to each authorization code that activates  
 10 the vending machine for receiving a request from the payer (13) identified by the admissible telephone number;

and wherein

the confirmation message generating means (20g) generate, when the first, second and third verifying means  
 15 (20a, 20b, 20c) have respectively generated the first, second and third acceptance message, and transmit the confirmation message that comprises at least the code for activating the vending machine and the admissible telephone number of the payer's (13) mobile telephone  
 20 (16).

31. A system according to claim 30, wherein the confirmation message generating means (20g) establish a communication between the payer's (13) mobile telephone  
 25 and the vending machine (29), for a pre-established period of time during which the payer (13) can transmit, through the first server (20), a selection message to the vending machine (29); and wherein the server (20) further comprises deactivation detecting means (20o) for detecting  
 30 deactivation of the vending machine (29).

32. A system according to claim 31, wherein the authorization criterion associated to the admissible telephone number of each vending machine is a direct  
 35 authorization code that establishes a maximum limit

selected from an economic value and a number of dispensing requests, admitted in a specific period of time in respect of requests made from the same mobile telephone, and wherein the confirmation message generating means (20g) generate the confirmation message when the direct authorization code has been detected.

33. A system according to claim 30, wherein when the confirmation message generating means (20g) in the first server (20), close the communication with the vending machine (29) after having transmitted the confirmation message, so that the payer (13) may make his selection directly by means of the selection display of the vending machine.

34. A system according to claim 30, 31, 32 or 33, wherein the first server (20) further comprises recording means (20p) associated to the authorization means (20d), for recording transactions recorded in each vending machine (29).

35. A system according to claim 1, wherein the first verifying means (20a) of the first server (20) further comprise complementary verifying means (20g) being associated to the selecting means (20h), for verifying if the admissible identification code that has been verified by the first verifying means (20a) in said first message received from a payer (13) identified by a first admissible telephone number and containing a transaction request that has been verified by the second verifying means (20b), corresponds to a second admissible telephone number from among the admissible telephone numbers of a digital mobile telephone (41) comprised within the first information contained in the first data storage means (22) and if the first message identifies the second admissible

telephone number as identification of a payee (40), the complementary verifying means (20q) generating a fourth acceptance message when detecting that said second admissible telephone number corresponds to a payee (40),  
5 said fourth acceptance message being processable by the confirmation message generating means (20g), and wherein the rejection message generating means (20f) generate a rejection message when the fourth message has not been generated.

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36. A system according to claim 35, wherein  
the confirmation message generating means (20g) generate, when detecting the first, second, third and fourth acceptance message, a first confirmation message  
15 containing an identification of the payer (13), an identification of the transaction and a petition for conformity to the payee (40) identified in the first message; said petition for conformity comprising a request of transmission of the safety parameter, and transmit said  
20 confirmation message to the mobile telephone (41) of the payee (40) identified by the second admissible telephone number through the telecommunication means (18,19) selected by the selecting means;

the third verifying means (20c) furthermore verify if  
25 the safety parameter transmitted from the mobile telephone (41) in response to the petition for conformity, satisfies the safety criterion associated to the second admissible telephone number, said third verifying means (20c) generating a fifth acceptance message when said parameter  
30 satisfies said safety criterion;

the authorization means (20e) authorize the account management means (20d) when said fifth acceptance message has been generated;

the confirmation message generating means (20g)  
35 generate and transmit a second confirmation message to the

mobile telephone (16) of the payer and to the mobile telephone (41) of the payee (41).

8/6/17 5 37. A system according to any of claims 1, 35 or 36, wherein, in the first server (20), each second information contained in the second data storage means (21) and referring to the type of digital mobile telephone corresponding to each admissible telephone number of each associated payer (13) and each admissible identification code of each payee (40) when the latter is a number of a digital mobile telephone, is a first identifying code being representative of the International Mobile Equipment Identifier (IMEI).

15 38. A system according to claim 37, wherein the first server (20) comprises first inquiry means (20r) for inquiring in at least one Visitor Location Register (VLR) comprising a first register relating telephone numbers with an IMEI code, the IMEI code corresponding to each of  
20 the admissible telephone numbers, and updating means (20s) for updating said second information in the second data storage means (21) by comparing each IMEI code inquired by the first inquiry means (20r) with each code being representative of the IMEI code associated to each  
25 admissible telephone number as contained in the second data storage means (21).

30 39. A system according to claim 38, wherein the first inquiry means (20r) extract the IMEI code associated to each admissible phone number, from an Equipment Identifier Register (EIR) that contains an association between each admissible telephone number and the IMEI code corresponding to each admissible telephone number, and which receive said association from each Visitor Location  
35 Register as updated by said Visitor Location Register.

40. A system according to claim 38 or 39, wherein the first inquiry means (20r) extract the IMEI code associated to each admissible telephone number, from an Unstructured Supplementary Service Data (USSD) frame into which each Visitor Location Register associated to each Mobile Switching Center (MSC) which has issued said frame, has inserted the IMEI code associated to the admissible telephone number corresponding to the user who has originated said frame.

41. A system according to claim 38, wherein the first inquiry means (20r) extract the IMEI code associated to each admissible telephone number, through an interface between the Visitor Location Register and said inquiry means (20r).

42. A system according to claim 37, wherein the first server (20) comprises  
second inquiry means (20t) for inquiring the IMEI code corresponding to each admissible telephone number, in Call Data Registers (CDR) of a data bank of a mobile telephony network operator, that contain a relation of each telephone number which, on the grounds of a call, has originated a Call Data Register with an IMEI code of the terminal from which said call originated,

second updating means (20u) for updating said second information in the second data storage means (21) on the basis of a comparison of each IMEI code inquired by the second inquiry means (20t) with each code being representative of the IMEI code associated to each admissible telephone number, contained in the second data storage means (21).

43. A system according to claim 37, wherein the second

information further comprises at least one datum being indicative of a communication capacity selected from a capacity of managing sessions according to Wireless Application Protocols (WAP), a capacity of managing sessions of Unstructured Supplementary Service Data (USSD), and combinations thereof, of each digital mobile telephone identified by an IMEI code and associated to an admissible telephone number.

44. A system according to claim 37, wherein the first server (20) comprises

third inquiry means (20v) for inquiring in a data bank of a mobile telephony network operator, registers that each Mobile Switching Center (MSC) transfers immediately each time a USSD frame or a voice call is addressed to a specific telephone number, said registers containing a relation of each telephone number from which a call was made or originated the USSD frame with an IMEI code of the terminal from which said call or frame originated, in respect of the IMEI codes corresponding to each admissible telephone number, and

third updating means (20w) for updating said second information in said second data storage means (21) on the basis of a comparison of each inquired IMEI code inquired by the third inquiry means (20v) with each code being representative of the IMEI code associated to each admissible telephone number contained in the second data storage means.

45. A process for processing payments and transactions between payers (13) and payees (27, 29, 14, 14a, 13a, 40, 46), wherein a system as defined in <sup>claim 1</sup> ~~any of the preceding claims~~ is used.

46. A process according to claim 45, the process



comprising

- selectively receiving, through telecommunication means (18,19,28,47), in a payment and transaction center (17), a first message comprising the number of a mobile telephone (16) of a payer (13) or an identification code of a payee (27,29,14,14a,13a,40,46), and, furthermore,
- receiving the amount of a purchase or of a code identifying a product or service, in the payment and transaction center (17),
- verifying if the first message originates from a payer (13) identified by an admissible telephone number or an admissible identification code of a payee (27,29,14,14a,13a,40,46);
- verifying if conditions of a transaction requested in the first message, satisfy transaction criteria stored in first data storing means (22);
- verifying the type of digital mobile telephone associated to the admissible telephone number, in second data storage means (21), and selecting one telecommunications equipment (18,19) for communicating with the digital mobile telephone (16) identified by the admissible telephone number, through a telecommunications service being compatible with the type of digital mobile telephone (16) identified by the admissible telephone number;
- checking "on line", in the first data storage means (22), if the payer (13) has a disposable balance in a previously created electronic purse in said transaction and payment center (17);
- requesting the payer (13) identified in the first message, when the transaction condition is satisfied and there is a sufficient disposable balance for authorizing the transaction, to introduce into the mobile telephone (16) identified in the first message, and to transmit, a safety parameter;

- verifying in the first data storage means (22), if the safety parameter introduced into and transmitted by, the mobile telephone (16) of the payer, satisfies a safety criterion univocally assigned to said mobile telephone (16);
- 5 - authorizing and carrying out the transaction as requested when the safety parameter satisfies the safety criterion; and
- sending a confirmation that the transaction has been
- 10 carried out, to the mobile telephone (16) of the payer and to the payee (27,29,14,14a,13a,40,46).